

Design and Technology – Curriculum Overview 2025 - 26

Year 13 Contents table:

Product Design

Term	
1a	NEA ongoing – Complete Design work & start manufacture / Materials theory
1b	NEA ongoing – Continue manufacture of prototype / Material process theory
2a	NEA ongoing – Evaluation and testing / Digital Design & Manufacture theory
2b	Complete NEA & Start revision sessions / Modern manufacturing systems theory
3a	Study leave & Revision
3b	N/A

Year 13	
Autumn Term 1a	Term 1b
<p>7 Weeks</p> <p>Alongside the completion of the NEA, This term covers the performance characteristics of a range of materials, including papers like watercolour paper, various woods with properties such as moisture resistance and machinability, and metals assessed by conductivity, melting points, and structural use. It also includes polymers, elastomers, biodegradable polymers, composites, and smart or modern materials, each evaluated for specific properties like flexibility, strength, or environmental impact.</p> <p>It also introduces key forming, redistribution, and addition processes used in manufacturing. For polymers, calendaring is covered, while for metals, techniques such as cupping, deep drawing, and investment casting are explored for shaping and producing metal components.</p>	<p>7 Weeks</p> <p>This content explores key forming, redistribution, and addition processes for materials. Metalworking techniques include various welding methods (MIG, TIG, spot, and oxy-acetylene), cutting processes (flame, plasma, and laser cutting), and the use of machine screws. Woodworking processes cover the use of coach bolts and milling techniques.</p> <p>The section also covers finishing methods to enhance durability and appearance. For polymers, this includes acrylic spray paints and TPE coatings. Metal finishes involve techniques like anodising, plating, sealants, and cathodic protection. Wood finishes include colour washes and Danish oil.</p> <p>Modern industrial practices are introduced, including production systems such as UPS, QRM, and vertical in-house production. The role of computer systems in manufacturing is explored through modular and cell production and flexible manufacturing systems. Finally, digital design and manufacture focus on CAD and CAM technologies used throughout modern product development.</p>
Spring Term 2a	Term 2b
<p>6 Weeks</p> <p>This section focuses on digital design and manufacture, including virtual modelling and rapid prototyping, which streamline product development. It also highlights sustainable design, encouraging energy and material conservation and the reuse of offcuts, chemicals, heat,</p>	<p>5 Weeks</p> <p>This final section covers modern manufacturing systems and marks the transition from theory delivery to exam preparation. Students should now focus on applying their knowledge to commercial products, developing a deeper understanding of design styles, materials, manufacturing methods, and systems.</p>

<p>and water. Key systems such as electronic data interchange (EDI) and production planning and control (PPC) support efficient manufacturing.</p> <p>Product design and development are guided by accuracy, fitness for purpose, and consideration of aesthetics, ergonomics, and anthropometrics. Topics also include protecting intellectual property, designing for ease of manufacture, repair, and disposal, and evaluating the practicality of ideas through feasibility studies. Finally, it covers the role of enterprise and marketing in bringing products to market.</p>	<p>This phase involves detailed investigation to support analysis and exemplification in written exams. Emphasis is placed on using real-world examples to demonstrate understanding, helping students prepare thoroughly for both Paper 1 and Paper 2. The schedule is flexible to allow time for internal mock exams and to accommodate individual school or college requirements.</p>
<p>Summer Term 3a</p>	<p>Term 3b</p>
<p>6 Weeks</p> <p>Study leave / Revision</p>	<p>7 Weeks</p> <p>NA</p>
<p>GCE Design & Technology: Product Design - AQA</p> <p>Implementation: Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive therefore may be changed dependent on pace, challenge and student outcomes.</p> <p>Impact: Progress will be measured over time and dependent on specification/exam board stipulations. Mock NEA's, DIN tasks and actual NEA's will contribute towards whole school policies on assessment and feedback to students and parents. The subject teacher/HOD will liaise to discuss individual pupil's performance; ensuring appropriate interventions are put into place. Students will sit 'mock exams' to test acquired and required knowledge. These high stakes and low stakes testing measures will be analysed and discussed between the HOD and their line manager, within DT team meetings and through HOD - staff LMM meetings in order to identify KIMS and move student progress forward.</p>	

Year 12 Contents table:

Term	
1a	Introduction of course – Mini projects – 2D Design / Laser / 3D Printer
1b	Mini projects – Vacuum former / Aluminium forming / Laminating
2a	Mini Projects – Pewter casting / Injection moulding / Design skills
2b	Mini projects – Cardboard & Foam modelling / Mini NEA practice project
3a	Start NEA (Research Section)
3b	NEA – Concept designs / initial modelling

Year 12	
Autumn Term 1a	Term 1b
<p>7 Weeks</p> <p>Introduction to course. Discussion of past knowledge and projects. 3D Print and Scan theory</p>	<p>7 Weeks</p> <p>Vacuum forming theory / Demo / Practice for students Fretsaw / coping saw training. Design and Product Vacuum forming moulds.</p>

<p>Introduction to 3D modelling software (TinkerCAD) Design and Print own 3D model / Write up in sketch books Introduction to laser cutting and 2D design software 2D design tutorials and production of product. Using 2D design to produce 3D shapes (finger joints / working to accurate scale)</p>	<p>Finish Vacuum forming mini-project along with supporting theory questions / diagrams in sketch book Man made boards samples. Start aluminium mini project - Create designs. Aluminium mini project- Working with metals. Difference in cutting techniques Aluminium mini project - finish and complete theory questions Laminating Techniques - Polymers and Woods - Start Laminating mini project</p>
<p>Spring Term 2a</p>	<p>Term 2b</p>
<p>6 Weeks Laminating Techniques - Polymers and Woods - Complete mini project and answer theory questions Pewter Casting mini project - Produce design, mould, 2D design file Pewter Casting mini project - Complete product and write up process in sketch book Injection Moulding - Start mini project and produce a mould Complete injection moulding and write up process in sketch book. Review of all mini projects so far in preparation for the start of NEA Focus on design - Generation design ideas Design - Cloning</p>	<p>5 Weeks Cardboard & foam modelling techniques Mini NEA example and practice Mini NEA example and practice Mini NEA example and practice Research for NEA contexts - Look at existing projects for inspiration Finalise NEA context. Interview with each student to discuss logistics of NEA.</p>
<p>Summer Term 3a</p>	<p>Term 3b</p>
<p>6 Weeks NEA - Context and identification of problem NEA- Identify Client NEA - Research / Client meetings NEA - Research / Client meetings NEA - Product Spec / design brief NEA - Initial concept ideas with feedback from client.</p>	<p>7 Weeks NEA - Initial concept ideas with feedback from client. NEA - Re-visit concepts - w/ feedback NEA - Start design ideas NEA - Cardboard modelling of design idea NEA - Continue design ideas NEA - Cardboard modelling of design idea REVIEW OF NEA SO FAR - SET WORK FOR SUMMER HOLIDAYS</p>
<p>GCE Design & Technology: Product Design - AQA</p> <p>Implementation: Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive therefore may be changed dependent on pace, challenge and student outcomes.</p> <p>Impact: Progress will be measured over time and dependent on specification/exam board stipulations. Mock NEA's, DIN tasks and actual NEA's will contribute towards whole school policies on assessment and feedback to students and parents. The subject teacher/HOD will liaise to discuss individual pupil's performance; ensuring appropriate interventions are put into place. Students will sit 'mock exams' to test acquired and required knowledge. These high stakes and low stakes testing measures will be analysed and discussed between the HOD and their line manager, within DT team meetings and through HOD - staff LMM meetings in order to identify KIMS and move student progress forward.</p>	

Year 11 Contents table:

Term Subject	Food	Product Design
1a	Mock NEA – Responding to a brief, Research pages, Task 1: Amending a recipe, 2a: Preparing and cooking an amended recipe & 2b: evaluating an amended recipe. Mock practical exam – Task 2a: Preparing and cooking an amended recipe.	NEA – Finish research section & Start concept designs
1b	NEA - Responding to a brief, Research pages, Task 1: Amending a recipe, Task 2a: Preparing and cooking an amended recipe & Task 2b: evaluating an amended recipe. Practical Assessment 1 – Task 2a: Preparing and cooking an amended recipe.	NEA – Finish designs, begin modelling and producing prototype
2a	NEA - Task 3a: Menu and action planning for a two-course menu, Task 3b: Preparing and cooking a two-course menu & Task 3c: Evaluating a two-course menu. Practical Assessment 2 – 3b: Preparing and cooking a two-course menu.	NEA – Manufacture prototype
2b	NEA – Task 4a: Preparing and cooking a dish suitable for someone with a food related health condition & Task 4b: Evaluating a dish suitable for someone with a food related health condition.	NEA - Evaluation & Revision for Exam
3a	Revision	Revision
3b	N/A	N/A

Year 11

Autumn Term 1a	Term 1b
<p>7 weeks</p> <p>Food NCFE Level 1 & 2 Technical Award in Food and Cookery. Plan and produce dishes in response to a brief. Mock NEA Task 1 – Amending a recipe Assessment objectives: AO1 AO2 AO3 Task 2a – Preparing and cooking an amended recipe Assessment objectives: AO4 Task 2b – Evaluating an amended recipe Assessment objectives: AO3 AO5 Release of NEA brief 1st October 2025. NEA tasks commence: Task 1 – Amending a recipe Assessment objectives:</p>	<p>7 weeks</p> <p>Food NCFE Level 1 & 2 Technical Award in Food and Cookery. NEA Task 1 – Amending a recipe Assessment objectives: AO1 AO2 AO3 Task 2a – Preparing and cooking an amended recipe Assessment objectives: AO4 Task 2b – Evaluating an amended recipe Assessment objectives: AO3 AO5 Task 3a Menu and action planning for a 2 course menu Assessment objectives: AO1 AO2</p>

<p>AO1 AO2 AO3</p> <p>Product Design Students will continue working on their NEA that they started in Y10. Complete research section and their design ideas. They will already have chosen the context offered by the exam board and begun planning in Year 10 term 3b.</p>	<p>Product Design Students complete the making section of their NEA. This must be completed independently, with appropriate support for health & safety.</p>
<p>Spring Term 2a</p>	<p>Term 2b</p>
<p>6 weeks</p> <p>Food <i>NCFE Level 1 & 2 Technical Award in Food and Cookery.</i> Task 3a - Menu and action planning for a 2 course menu Assessment objectives: AO1 AO2 Task 3b – Preparing and cooking a 2-course menu Assessment objectives: AO4 Task 3c – Evaluating a 2 course menu Assessment objectives: AO3 AO5</p> <p>Product Design Students complete the Evaluation section of their NEA. Their product should be manufactured by now and they will review/suggest improvements. Once the NEA is finished we will focus on revising theory for the exam</p>	<p>5 weeks</p> <p>Food <i>NCFE Level 1 & 2 Technical Award in Food and Cookery.</i> Task 3c – Evaluating a 2 course menu Assessment objectives: AO3 AO5 Task 4a – Preparing and cooking a dish suitable for someone with a food related health condition Assessment objectives: AO4 Task 4b - Evaluating a dish suitable for someone with a food related health condition Assessment objectives: AO3</p> <p>Product Design Students will prepare for their exam by studying mastery sessions for concepts including: forces, mechanisms, material selection, material properties. Past exam papers/mocks will be completed</p>
<p>Summer Term 3a</p>	<p>Term 3b</p>
<p>6 weeks</p> <p>Food <i>NCFE Level 1 & 2 Technical Award in Food and Cookery.</i> Revision <i>Preparation for the written examination.</i></p> <p>Product Design <i>Final preparation for the unit 1 exam</i> In preparation for their summer examination, students will look at the social, cultural and environmental implications of technology, and further develop general skills for their examination.</p>	<p>N/A</p> <p><i>Courses complete</i> N/A – Students will have completed their course of study by term 3b.</p>

Implementation:

The delivery of all four strands of Design and Technology at Key Stage 4 is underpinned by specifications from each subject area i.e.

GCSE Design & Technology: Product Design - AQA

Level 1 & 2 Technical Award in Food and Cookery – NCFE

NEW COURSE in Y10 : Level 1 & 2 Technical Award in Graphic Design - NCFE

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive therefore may be changed dependent on pace, challenge and student outcomes.

Impact:

Progress will be measured over time and dependent on specification/exam board stipulations. Mock NEA’s, DIN tasks and actual NEA’s will contribute towards whole school policies on assessment and feedback to students and parents. The subject teacher/HOD will liaise to discuss individual pupil’s performance; ensuring appropriate interventions are put into place. Students will sit ‘mock exams’ to test acquired and required knowledge. These high stakes and low stakes testing measures will be analysed and discussed between the HOD and their line manager, within DT team meetings and through HOD - staff LMM meetings in order to identify KIMS and move student progress forward.

Year 10 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	<p>Content area 1 - <i>Health and safety relating to food, nutrition and the cooking environment.</i></p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i></p>	<p>Section 1 – <i>Core technical principals.</i></p>	<p>Baseline – <i>Mini Brief to assess core skills from KS3.</i></p> <p>Content area 1 - <i>Core skills booklet and begin Core technical principles.</i></p> <p>Content area 2 - <i>Work of Graphic Designers.</i></p>	<p>Unit 1 (CORE): <i>Sustainability, environmental issues, energy generation.</i></p> <p><i>Unit 2 (NEA):</i> <i>Accessibility project to develop NEA skills.</i></p>
1b	<p>Content area 1 - <i>Health and safety relating to food, nutrition and the cooking environment.</i></p> <p>Content area 3 - <i>Food groups, key nutrients and a balanced diet.</i></p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i></p>	<p>Section 1 – <i>Core technical principals continued.</i></p>	<p>Content area 1 - <i>Continuation of core skills booklet and core technical principles.</i></p> <p>Content area 2 - <i>Work of Graphic Designers.</i></p>	<p>Unit 1 (SYSTEMS): <i>Properties of components.</i></p> <p><i>Unit 2 (NEA):</i> <i>Accessibility project to develop NEA skills.</i></p>
2a	<p>Content area 3 -</p>	<p>Section B – <i>Theoretical knowledge of technical principles –</i></p>	<p>Content area 1 -</p>	<p>Mini NEA <i>(preparation).</i></p>

	<p><i>Food groups, key nutrients and a balanced diet.</i></p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i></p>	<p><i>Materials and Working properties.</i></p>	<p><i>Continuation of core skills booklet and core technical principles.</i></p> <p>Content area 2 - <i>Employment opportunities in graphic design.</i></p>	
2b	<p>Content area 3 - <i>Food groups, key nutrients and a balanced diet.</i></p> <p>Content area 2 - <i>Food legislation and food provenance.</i></p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i></p>	<p>Section B - <i>Theoretical knowledge of technical principles – Mechanical devices including Levers, Pulleys and Rotary systems.</i></p>	<p>Content area 3 - <i>Requirements of a graphic design brief. Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 4 - <i>Planning, development and experimentation - Stages of the development process. Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 5 - <i>Mini NEA (preparation and refinement of skills) Graphic design production.</i></p>	<p>Mini NEA <i>(preparation).</i></p>
3a	<p>Content area 2 - <i>Food legislation and food provenance.</i></p> <p>Content area 4 - <i>Factors affecting food choice.</i></p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i></p>	<p>NEA Preparation - <i>Students will be led through the process of their NEA in preparation for a June start.</i></p>	<p>Content area 3 - <i>Requirements of a graphic design brief. Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 4 - <i>Planning, development and experimentation. Techniques, components and properties. Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 5 - <i>Mini NEA (preparation and refinement of skills) Graphic design production.</i></p>	<p>Unit 1 (CORE): <i>Properties of materials & material selection.</i></p>
3b	<p>Content area 6 - <i>Recipe amendment, development and evaluation.</i></p> <p>Content area 7 - <i>Menu and action planning for completed dishes.</i></p>	<p><i>Students begin the research section of their official GCSE NEA.</i></p>	<p>Content area 3 - <i>Design constraints. Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 4 - <i>Planning, development and experimentation-</i></p>	<p><i>NEA section 1.</i></p>

			<p><i>components, tools, materials, techniques.</i> <i>Mini NEA (preparation and refinement of skills)</i></p> <p>Content area 5 - <i>Mini NEA (preparation and refinement of skills)</i> <i>Graphic design production.</i></p>	
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Year 10

Autumn Term 1a	Term 1b
<p>7 weeks</p> <p>Food Content area 1 - <i>Health and safety relating to food, nutrition and the cooking environment.</i> Students will complete work relating to: 1.1. Safe and hygienic working practices when food is prepared and cooked. 1.2. Potential hazards and risks in the cooking environment. 1.3. Hazard Analysis and Critical Control Points (HACCP). 1.4. Minimising risk in the cooking environment. 1.5. Safe and hygienic working practices when using cooking equipment and utensils.</p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p>	<p>7 weeks</p> <p>Food Content area 1 - <i>Health and safety relating to food, nutrition and the cooking environment.</i> Students will complete work relating to: 1.1. Safe and hygienic working practices when food is prepared and cooked. 1.2. Potential hazards and risks in the cooking environment. 1.3. Hazard Analysis and Critical Control Points (HACCP). 1.4. Minimising risk in the cooking environment. 1.5. Safe and hygienic working practices when using cooking equipment and utensils.</p> <p>Content area 3 - <i>Food groups, key nutrients and a balanced diet.</i> Students will complete work relating to: 3.1. Food groups. 3.2. The components of a balanced diet. 3.2.1. Proportions of the food groups. 3.2.2. UK government healthy eating tips. 3.3. Nutrients. 3.3.1. Sources and functions of macronutrients. 3.3.2. Sources and functions of micronutrients. 3.3.3. Sources and functions of minerals. 3.3.4. Sources and functions of water. 3.4. Nutrient imbalances. 3.5. Fibre. 3.6. Nutritional requirements for different groups of people. 3.7. Food related health conditions. 3.7.1. Health conditions.</p>

<p>Product Design <i>Section 1 – Core technical principals.</i> Completing theory work covering a breadth of technical knowledge and understanding. This includes Sustainability, environmental issues, energy generation.</p> <p>Graphics <i>Course Induction:</i> Content area 1 - This will consist of a core skills exploration, it will provide a foundation for the course including the structure of the qualification and the assessment process. It will also help the students to develop an understanding of the assessment criteria. They will be introduced to basic Graphics skills using ICT where appropriate.</p> <p>Components of graphic design</p> <ul style="list-style-type: none"> 1.1 Components <ul style="list-style-type: none"> 1.1.1 Line 1.1.2 Colour 1.1.3 Tone 1.1.4 Composition 1.1.5 Typography 1.1.6 Imagery 1.2 Visual language of graphic design 1.3 Graphic design principles <p>Alongside the core skills students will work on a mini brief as a baseline.</p> <p>Electronics <i>Unit 1 (CORE): Sustainability, environmental issues, energy generation</i> Students will look at where materials are sourced from, how they can be sourced sustainably, and how they have an impact on the surrounding environment and population. They will look at how energy is generated. They will consider how a combination of all of these processes can and should have an impact on the design process. <i>Unit 2 (NEA): Accessibility project to develop NEA skills.</i></p>	<p>3.7.2. Intolerances. 3.7.3. Allergies. 3.8. Nutritional information on food labels.</p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p> <p>Product Design <i>Section 1 Continued – Core technical principals.</i> Completing theory work covering a breadth of technical knowledge and understanding. This includes methods of production, mass, batch, one off. FPT to help with this - Manufacturing Christmas decorations on a production line in the workshop</p> <p>Graphics <i>Unit 01 delivery continued:</i> Content area 1 - The students will continue to experiment with the graphic design components producing a range of both hand rendered and manipulated outcomes. Students must demonstrate use of Colour, Tone, Line, Composition, Typography, Imagery. Experiments will explore the qualities, effects, properties etc of graphic design materials and techniques using graphic design components. The graphic design components will be shown in a variety of uses or applications. The student’s experiments can take the form of mixed media, digital layouts, digital manipulation, swatches, montage, typographical layouts etc. Students will be set another mini brief alongside the unit to practice key skills and apply knowledge of components of Graphic Design in preparation for the NEA.</p> <p>Content area 2 - Work of graphic designers</p> <ul style="list-style-type: none"> 2.1 Types of graphic design work 2.2 Employment opportunities in graphic design <p>Electronics <i>Unit 1 (SYSTEMS): Properties of components, microcontrollers, ethical implications of technology</i> Students will consider how to appropriately select components for circuits based on their properties by creating system block diagrams. They will learn how to program microcontrollers to create more complex tasks, and how microcontrollers have superseded logic gates. They will use a combination of this information to discuss the ethical implications of technology. <i>Unit 2 (NEA): Accessibility project to develop NEA skills.</i></p>
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<p>Students will complete a project over the half term where they design an electronic desk light with a feature that will support the needs of those with motor control difficulties. They will work through the research and design process, with consideration to the needs of the user.</p>	<p>Students will proceed through the making process, with focus on high quality finishes and appropriate casing for an electronic circuit.</p>
<p>Spring Term 2a</p>	<p>Term 2b</p>
<p>6 weeks</p> <p>Food Content area 3 - <i>Food groups, key nutrients and a balanced diet.</i> Students will complete work relating to: 3.1. Food groups. 3.2. The components of a balanced diet. 3.2.1. Proportions of the food groups. 3.2.2. UK government healthy eating tips. 3.3. Nutrients. 3.3.1. Sources and functions of macronutrients. 3.3.2. Sources and functions of micronutrients. 3.3.3. Sources and functions of minerals. 3.3.4. Sources and functions of water. 3.4. Nutrient imbalances. 3.5. Fibre. 3.6. Nutritional requirements for different groups of people. 3.7. Food related health conditions. 3.7.1. Health conditions. 3.7.2. Intolerances. 3.7.3. Allergies. 3.8. Nutritional information on food labels. Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p>	<p>5 weeks</p> <p>Food Content area 3 - <i>Food groups, key nutrients and a balanced diet.</i> Students will complete work relating to: 3.1. Food groups. 3.2. The components of a balanced diet. 3.2.1. Proportions of the food groups. 3.2.2. UK government healthy eating tips. 3.3. Nutrients. 3.3.1. Sources and functions of macronutrients. 3.3.2. Sources and functions of micronutrients. 3.3.3. Sources and functions of minerals. 3.3.4. Sources and functions of water. 3.4. Nutrient imbalances. 3.5. Fibre. 3.6. Nutritional requirements for different groups of people. 3.7. Food related health conditions. 3.7.1. Health conditions. 3.7.2. Intolerances. 3.7.3. Allergies. 3.8. Nutritional information on food labels. Content area 2 - <i>Food legislation and food provenance.</i> Students will complete work relating to: 2.1. The food standards agency and food safety legislation. 2.2. Food provenance. 2.2.1 Grown. 2.2.2. Reared. 2.2.3. Caught. 2.3. Food transportation. 2.4. Food processing. 2.4.1. Why food is processed. 2.4.2. Advantages of processed food. 2.4.3. Disadvantages of processed food. 2.5. Food manufacturing. 2.5.1. Why food is manufactured. 2.5.2. Advantages of manufactured food. Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p>

<p>Product Design <i>Section B –</i> Theory work to cover more in depth knowledge of technical principles. Students will study materials and their working properties.</p> <p>Graphics Students begin Mini NEA: Past NEA example brief. The students will review their graphic design experiments using key Graphic Design terminology. The learner must evaluate the visual impact of their experiments and the choices made during their experiments, looking into initial ideas and development. Students will review the choices they made when selecting and applying tools, materials and techniques, when experimenting with graphic design components. They will explain how the preceding experiments and their design intentions influence their choices.</p> <p>Content area 3 - Requirements of a graphic design brief 3.1 Types of graphic design briefs 3.2 Graphic design brief requirements 3.3 Design constraints</p> <p>Content area 4 - Planning, development and experimentation 4.1 Planning and development processes 4.1.1 Stages of the development process 4.1.2 Techniques, components and properties 4.2 Experimenting with tools, materials and techniques 4.2.1 Components of graphic design 4.2.2 Tools 4.2.3 Materials 4.2.4 Techniques 4.3 Ongoing review</p> <p>Content area 5 - Graphic design production 5.1 Digital technical skills 5.2 Effective use of resources 5.3 Summative evaluation</p> <p>Electronics <i>Mini NEA (preparation)</i> Students will be led through the process of their NEA in preparation for a June start. This will be done using the design contexts set by Edexcel in the previous year. Students will consider how to appropriately select a context and how to conduct research to aid them in designing creatively. They will begin designing.</p>	<p>Product Design <i>Section B –</i> Students continue to cover theory work focusing on an in depth knowledge of technical principles. Students will study mechanical devices including levers, pulleys and rotary systems</p> <p>Graphics Content area 3 - Requirements of a graphic design brief 3.1 Types of graphic design briefs 3.2 Graphic design brief requirements 3.3 Design constraints</p> <p>Content area 4 - Planning, development and experimentation 4.1 Planning and development processes 4.1.1 Stages of the development process 4.1.2 Techniques, components and properties 4.2 Experimenting with tools, materials and techniques 4.2.1 Components of graphic design 4.2.2 Tools 4.2.3 Materials 4.2.4 Techniques 4.3 Ongoing review</p> <p>Content area 5 - Graphic design production 5.1 Digital technical skills 5.2 Effective use of resources 5.3 Summative evaluation</p> <p>Electronics <i>Mini NEA (preparation)</i> Students will continue learning the process of their NEA by developing their design skills. They will develop design ideas for their chosen theme and create a model/prototype of their chosen design. This will help them to understand possible pitfalls that they may face when they begin their real NEA in June, and</p>
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	give them the opportunity to further develop skills such as designing and modelling.
Summer Term 3a	Term 3b
<p>6 weeks</p> <p>Food Content area 2 - <i>Food legislation and food provenance.</i> Students will complete work relating to: 2.1. The food standards agency and food safety legislation. 2.2. Food provenance. 2.2.1 Grown. 2.2.2. Reared. 2.2.3. Caught. 2.3. Food transportation. 2.4. Food processing. 2.4.1. Why food is processed. 2.4.2. Advantages of processed food. 2.4.3. Disadvantages of processed food. 2.5. Food manufacturing. 2.5.1. Why food is manufactured. 2.5.2. Advantages of manufactured food.</p> <p>Content area 4 - <i>Factors affecting food choice.</i> Students will complete work relating to: 4.1. Social factors. 4.2. Environmental factors. 4.3. Seasonality.</p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p> <p>Product Design <i>NEA Preparation -</i> Students will be led through the process of their NEA in preparation for a June start. This will be done using the design contexts set by AQA in the previous year. Students will consider how to appropriately select a context and how to conduct research to aid them in designing creatively. They will begin designing.</p> <p>Graphics Content area 3 - Requirements of a graphic design brief 3.1 Types of graphic design briefs 3.2 Graphic design brief requirements 3.3 Design constraints</p> <p>Content area 4 - Planning, development and experimentation 4.1 Planning and development processes 4.1.1 Stages of the development process</p>	<p>7 weeks</p> <p>Food Content area 6 - <i>Recipe amendment, development and evaluation.</i> Students will complete work relating to: 6.1. Recipe amendment. 6.1.1. Amending and developing recipes. 6.2. Evaluating completed dishes.</p> <p>Content area 7 - <i>Menu and action planning for completed dishes.</i> 7.1. Interpreting a customer brief. 7.2. Menu planning. 7.3. Action planning. 7.4. Evaluating the planning and outcome of completed dishes against the requirements of a customer brief.</p> <p>Content area 5 - <i>Food preparation, cooking skills and techniques.</i> Students will prepare, cook and assemble a variety of food products.</p> <p>Product Design Students begin the research section of their official GCSE NEA. They will be provided with a selection of official design context from the exam board (AQA) on June 1st and will begin their project by selecting their chosen theme for the rest of the project. They will conduct some market research in order to prepare themselves for designing in Year 11 Term 1a.</p> <p>Graphics Content area 3 - Requirements of a graphic design brief 3.1 Types of graphic design briefs 3.2 Graphic design brief requirements 3.3 Design constraints</p> <p>Content area 4 - Planning, development and experimentation 4.1 Planning and development processes 4.1.1 Stages of the development process</p>

<p>4.1.2 Techniques, components and properties 4.2 Experimenting with tools, materials and techniques 4.2.1 Components of graphic design 4.2.2 Tools 4.2.3 Materials 4.2.4 Techniques 4.3 Ongoing review</p> <p>Content area 5 - Graphic design production 5.1 Digital technical skills 5.2 Effective use of resources 5.3 Summative evaluation</p> <p>Electronics <i>Unit 1 (CORE): Properties of materials & material selection</i> Students will look at the properties of a variety of materials including textiles, metal, plastic, timber, and smart materials. They will learn to understand what is meant by a 'property', and how the properties of materials allow us to select the best possible material for a chosen product. They will look at how to write this in more depth, such as to answer a long answer question in the exam.</p>	<p>4.1.2 Techniques, components and properties 4.2 Experimenting with tools, materials and techniques 4.2.1 Components of graphic design 4.2.2 Tools 4.2.3 Materials 4.2.4 Techniques 4.3 Ongoing review</p> <p>Content area 5 - Graphic design production 5.1 Digital technical skills 5.2 Effective use of resources 5.3 Summative evaluation</p> <p>Electronics <i>NEA section 1</i> Students begin section 1 (research) of their official GCSE NEA. They will be provided with a selection of official design context from the exam board (Edexcel) on June 1st and will begin their project by selecting their chosen theme for the rest of the project. They will conduct some market research in order to prepare themselves for designing in Year 11 Term 1a.</p>
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Implementation:

The delivery of all four strands of Design and Technology at Key Stage 4 is underpinned by specifications from each subject area i.e.

GCSE Design & Technology: Product Design - AQA

GCSE Design & Technology: Electronic products – AQA

Level 1 & 2 Technical Award in Graphic Design - NCFE

Level 1 & 2 Technical Award in Food and Cookery - NCFE

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive therefore may be changed dependent on pace, challenge and student outcomes.

Impact:

Progress will be measured over time and dependent on specification/exam board stipulations. Mock NEA's, DIN tasks and actual NEA's will contribute towards whole school policies on assessment and feedback to students and parents. The subject teacher/HOD will liaise to discuss individual pupil's performance; ensuring appropriate interventions are put into place. Students will sit 'mock exams' to test acquired and required knowledge. These high stakes and low stakes testing measures will be analysed and discussed between the HOD and their line manager, within DT team meetings and through HOD - staff LMM meetings in order to identify KIMS and move student progress forward.

Year 9 Contents table:

Term	Food	Product Design	Graphics	Electronics
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Subject				
1a	<i>Hygiene and Safety</i>	<i>Health and Safety and an introduction to tools and equipment.</i>	<i>What is Graphic Design? An introduction. Begin Festival Project. How to respond to a Design brief.</i>	<i>Mini project – Audio Amplifier. Design and Research.</i>
1b	<i>Hygiene and Safety</i>	<i>Mini project – ‘Plastic Fantastic’.</i>	<i>Graphics Skills, formulation of corporate identity.</i>	<i>Mini project – Audio Amplifier. Final Design.</i>
2a	<i>Commodities, Functions and Skills</i>	<i>Using the Laser cutter and Engraver. CAD and 2D Design.</i>	<i>Experimentation using the 6 Graphic Design components.</i>	<i>Mini project – Audio Amplifier. Production of Final Design – Internal Circuit.</i>
2b	<i>Commodities, Functions and Skills</i> <i>Nutritional health & Special diets.</i>	<i>Using the Laser cutter and Engraver. CAD and 2D Design.</i>	<i>Presentational skills and how Graphic Designers present to clients.</i>	<i>Mini project – Audio Amplifier. Production of Final Design – Casing.</i>
3a	<i>Nutritional health & Special diets.</i>	<i>3D Modelling and CAD software.</i>	<i>Presentation of ideas and proposal for Festival project, including samples.</i>	<i>Standalone Unit – Programming project.</i>
3b	<i>Customer acceptability including Organoleptic descriptors, Portion control, Healthy eating and other external factors.</i>	<i>3D Printing and the production of a 3D product.</i>	<i>Utilisation of a range of Graphics applications to produce a final product for the festival project.</i>	<i>Standalone Unit – New and Immerging Technologies.</i>

Year 9

Autumn Term 1a	Term 1b
<p>7 weeks</p> <p>Food <i>Hygiene and Safety</i> Students will be taught concepts of Hygiene and Safety:</p> <ul style="list-style-type: none"> • Basic Hygiene and Safety. • Industrial standards. • Risk Assessments and HACCP. • Equipment safety and effective use. • Food related causes of ill health. • The role of the EHO. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.</p> <p><i>Practical lessons</i> - will run bi-weekly and focus on the acquiring and application of skills.</p> <p>Product Design</p>	<p>7 weeks</p> <p>Food <i>Hygiene and Safety</i> Students will be taught concepts of Hygiene and Safety:</p> <ul style="list-style-type: none"> • Basic Hygiene and Safety. • Industrial standards. • Risk Assessments and HACCP. • Equipment safety and effective use. • Food related causes of ill health. • The role of the EHO. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.</p> <p><i>Practical lessons</i> - will run bi-weekly and focus on the acquiring and application of skills.</p> <p>Product Design</p>

<p>Start of a skills-based year focusing on mini projects teaching them about manufacturing processes, material properties while also focusing on health and safety in the workshop.</p> <p>Starting with health and safety recap and introduction to new tools and equipment</p> <p>Start of the Plastic Fantastic Pen project (Working for Amazon to design a promotional product) - covering lamination, acrylic, bonding and vacuum forming.</p> <p>Graphics What is Graphic Design? Why is Graphic Design important within D&T? Throughout the Autumn term:</p> <ul style="list-style-type: none"> • Discussion and introduction to the Graphic Design Components and how they can be implemented into a generated outcome. • Introduction to design briefs and how to respond to a brief and begin the research process in the beginning of a project. • Students will be provided with a detailed project brief, learners should develop skills on how to unpick relevant information and key terminology that will provide support in the development stages. • Begin considering the corporate identity for their festival project. <p>Electronics Students will begin a project that is designed to represent a Non-Examined Assessment. This will give students an idea of the coursework project they may complete in Year 10 and 11 in Design and Technology (if chosen). The design project is to produce an audio amplifier that could be plugged in to a phone or similar device. In term 1a, they will look at:</p> <ul style="list-style-type: none"> • Design context, including consideration of the target market and design brief. • Analysis of existing products. • Research into existing and suitable materials. <p>A design specification so that they are ready to start designing in the next half term.</p>	<p>Continue and finish the Pen project. Focus on material properties of various plastics and the use of the vacuum forming machine.</p> <p>Include theory based around different production methods. One off, batch, mass production, continuous production.</p> <p>Graphics What is Graphic Design? Why is Graphic Design important within D&T? Throughout the Autumn term:</p> <ul style="list-style-type: none"> • Discussion and introduction to the Graphic Design Components and how they can be implemented into a generated outcome. • Consideration and completion of the corporate identity for their festival project. • How to formulate a design specification. • Theory on material choice. • Learners will discuss and investigate the different between 'Initial Designs/Developments and Final Outcomes' <p>Electronics In this half term, students will develop a final design for their audio amplifier by considering how the various parts of the design process combine together to form iterative design. This will include:</p> <ul style="list-style-type: none"> • A variety of creative initial design ideas. • Modelling. • Development into a final design. • Using a variety of forms of communication. <p>Developing knowledge of key words and vocabulary for annotation.</p>
<p>Spring Term 2a</p>	<p>Term 2b</p>
<p>6 weeks</p> <p>Food <i>Commodities, Functions & Skills</i> Students will be taught the concepts of commodities, functions and skills:</p> <ul style="list-style-type: none"> • Commodities – where does our food come from? 	<p>5 weeks</p> <p>Food <i>Commodities, Functions & Skills</i> Students will be taught the concepts of commodities, functions and skills:</p> <ul style="list-style-type: none"> • Commodities – where does our food come from?

<ul style="list-style-type: none"> • The Functions and Properties of Commodities. • Skills and how to incorporate these within practical tasks. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice</p> <p>Product Design Focus – Laser Cutter / Engraver. CAD – 2D design software. This will include various FPTs covering the skills needed to use the 2D design software to a high level.</p> <p>Students will work through various tutorials and create their own laser cut/engraved product</p> <p>Graphics To understand terminology used in the Graphic Design Industry. How to respond a project brief? How do you incorporate client’s values within your outcomes? Why and how Graphic Design Components can be used to edit/enhance your experiments? Throughout the Spring Term:</p> <ul style="list-style-type: none"> • Students will be introduced to reflective documentation. This includes: How to communicate your process of making using Graphic Design Terminology/The importance of forming a connection between the requirements of the brief and their experiments/Peer & Self-assessment and how this can be clearly recorded/To show the students understanding of <u>why</u> they have used a particular technique in their presentation of 	<ul style="list-style-type: none"> • The Functions and Properties of Commodities. • Skills and how to incorporate these within practical tasks. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice</p> <p><i>Nutritional health & Special diets.</i> Students will be taught the concept of effective nutrition and the impact on health; they will consider governmental guidelines on nutrition and focus on healthy eating:</p> <ul style="list-style-type: none"> • Nutritional guidelines linked to the Eat well plate. • Special diets and other factors affecting nutritional health. • Designing meals for a purpose or client. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.</p> <p>Product Design <i>Continuation of the CAD/CAM theory -</i> The students will learn how to transfer/convert files and how to operate the laser cutter. They will make various products throughout. We will also look at different joining methods available through laser cutting. Finger joints/ natural hinges.</p> <p>Graphics To understand terminology used in the Graphic Design Industry. How to respond a project brief? How do you incorporate client’s values within your outcomes? Why and how Graphic Design Components can be used to edit/enhance your experiments? Throughout the Spring Term:</p> <ul style="list-style-type: none"> • Students will be introduced to Collaborative working, how this can change the way they produce outcomes (e.g. how to share the responsibility and share control in the development stages) • An introduction to presentational skills and how Graphic Designers present their final outcomes to their client in a creative format (this could include PowerPoint or creative portfolio)
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<p>designs (Traditional techniques/Digital Manipulation).</p> <ul style="list-style-type: none"> • Students will be introduced to Collaborative working, how this can change the way they produce outcomes (e.g. how to share the responsibility and share control in the development stages) • An introduction to presentational skills and how Graphic Designers present their final outcomes to their client in a creative format (this could include PowerPoint or creative portfolio) <p>Electronics Students will physically create their product (the internal circuit), including:</p> <ul style="list-style-type: none"> • Techniques for high quality soldering. • How to minimise errors while working, and identify correct polarity. • Techniques for fault-finding when soldering - how to identify and repair any errors made on a circuit board. <p>They will model and consider how to create the physical case so that it is both aesthetically appealing but also safe for the user.</p>	<ul style="list-style-type: none"> • Students will begin exploring material choice and producing models for their Festival Project merchandise. <p>Electronics Students will physically create their product (the physical case), including:</p> <ul style="list-style-type: none"> • Consideration of the techniques used to cut, waste and mould materials. • Selection of the most appropriate tools and manufacturing processes. • Accurate use of the most suitable surface finish. <p>Precise assembly of the electronic components with the finished case.</p>
<p>Summer Term 3a</p>	<p>Term 3b</p>
<p>6 weeks</p> <p>Food <i>Nutritional health & Special diets.</i> Students will be taught the concept of effective nutrition and the impact on health; they will consider governmental guidelines on nutrition and focus on healthy eating:</p> <ul style="list-style-type: none"> • Nutritional guidelines linked to the Eat well plate. • Special diets and other factors affecting nutritional health. • Designing meals for a purpose or client. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.</p> <p>Product Design Introduction to 3D modelling – Students will follow a program of tutorials to learn how to 3D model using CAD software (currently TinkerCAD). They will also study the principals of 3D printing alongside this.</p>	<p>7 weeks</p> <p>Food <i>Customer acceptability including Organoleptic descriptors, Portion control, Healthy eating and other external factors.</i> Students will be taught the concept of customer acceptability and the factors which affect these preferences:</p> <ul style="list-style-type: none"> • Sensory/environmental/cultural and costing factors affecting food choice. • Organoleptic factors and customer preference. • Healthy eating and the Eat well plate. <p>They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.</p> <p>Product Design <i>3D Printing</i> – Students to study the process and understand how various 3D printer's work. What is the benefit to society? They will learn how to operate the</p>

<p>Graphics Develop skills and knowledge regarding presentation skills through the production of a design proposal.</p> <ul style="list-style-type: none"> • Students will, using the creative outcomes from their response to the project brief, begin to formulate a design proposal to display their process of making and showcase their designs for their festival project. • Learners will investigate and analyse examples of presentational methods, both successful and unsuccessful attempts to generate and develop good practice • Students will explore various presentational formats, including PowerPoint/Creative Folder/ Image slideshow etc. • Learners will select their chosen presentational format, working both collaboratively with their peers and through the investigation of existing portfolios (I will show the learners mine), they will produce a Creative Portfolio mirroring the quality/presentation of ones produced within the Graphic Design Industry. <p>Electronics Standalone lessons as part of a 7-week programming project. This helps students to learn:</p> <ul style="list-style-type: none"> • The role of sensors in electronic systems. • The role of switches in electronic systems. • The use of control devices and components. • The role of outputs in electronic systems. • How to process and respond to inputs. <p>How to use routines to control outputs with delays, loops and counts.</p>	<p>3D printer on their own and they will print at least 1 3D object that they have modelled themselves.</p> <p>Graphics Develop skills and knowledge regarding presentation skills through the production of a design proposal.</p> <ul style="list-style-type: none"> • Students will, using the creative outcomes from their response to the project brief, begin to finalise the formulation of their design proposal to display their process of making and showcase their designs for their festival project. • Learners will investigate and analyse examples of presentational methods, both successful and unsuccessful attempts to generate and develop good practice • Students will explore various presentational formats, including PowerPoint/Creative Folder/ Image slideshow etc. • Learners will select their chosen presentational format, working both collaboratively with their peers and through the investigation of existing portfolios (I will show the learners mine), they will produce a Creative Portfolio mirroring the quality/presentation of ones produced within the Graphic Design Industry. • Students will then present their proposal. <p>Electronics Standalone lessons that consider the impact of new and emerging technology on the world around us. This will include three aspects:</p> <ol style="list-style-type: none"> 1. An ethics investigation that will consider industry, enterprise, people, culture and society. 2. A look at how modern technology impact sustainability & the environment, and how designers can try to mitigate the impact of this. <p>How we can use mechanisms such as levers, linkages, cams, followers, pulleys & belts. A look at the types of movement including linear, reciprocation, rotary and oscillation.</p>
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Implementation:

The delivery of all four strands of Design and Technology at Key Stage 3 is underpinned by the National Curriculum programmes of study for D&T. The D&T department have utilised the guidance in these programmes of study to devise a 'mastery curriculum' where students aim to achieve 'milestones' at varying levels over the course of their study:

Key Stage 3 D&T Milestones:**Design**

- Use research and exploration, such as the study of different cultures, to identify and understand user needs.
- Identify and solve design problems and understand how to reformulate problems.
- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.
- Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses.
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.

Make

- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.
- Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

Evaluate

- Analyse the work of past and present professionals and others to develop and broaden understanding.
- Investigate new and emerging technologies.
- Test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.

Technical Knowledge

- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.
- Understand how more advanced mechanical systems are used in products to enable changes in movement and force.
- Understand how more advanced electrical and electronic systems can be powered and used in products [for example, circuits with heat, light, sound and movement as inputs and outputs.]
- Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].

Cooking & Nutrition

- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.
- Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using own recipes]
- Understand the source, seasonality and characteristics of a broad range of ingredients.

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive and may be changed dependent on pace, challenge and student outcomes. Students are issued with a self-contained booklet for each D&T strand and most (although not all) theory work will be completed within these documents, providing evidence of outcomes and acquired knowledge whilst also showing progress (see below).

Impact:

High stakes testing of acquired knowledge and progress will take place through summative assessment in line with whole school policy. Live marking of theory work will be used to provide instant feedback to students and identify misconceptions throughout the year. The use of MAP sheets/peer and self-evaluation sheets and postcards will be used where relevant to give students localised and regular feedback.

Low stakes testing will be used as and when at the teacher’s discretion and will utilise a simple set of criteria.

Learning objective starters will incorporate DIN, Tier 2 vocabulary CST and Careers.

Progress will be measured over time; contributing to whole school policies on assessment and feedback to students and parents. Students work outcomes will provide the basis for analysis and intervention where appropriate and necessary; providing every student with the opportunity to be the best they can be.

Year 8 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	<i>Hygiene and Safety</i>	<i>Health & Safety/Design brief/Research.</i>	<i>What is Graphic Design? Skills booklet – colour theory and rendering.</i>	<i>Health and Safety.</i>
1b	<i>Equipment, Processes and Skills.</i>	<i>Research and Generating design ideas.</i>	<i>Skills booklet- 2D and 3D shapes, one-point and two-point perspective, crating.</i>	<i>Designing.</i>
2a	<i>Assessment and Evaluation.</i>	<i>Materials research.</i>	<i>What is a design brief? Testing and evaluation.</i>	<i>Soldering – including Health and Safety.</i>
2b	<i>Food Sources & Availability and Sensory/Organoleptic Evaluation.</i>	<i>Modelling.</i>	<i>Rendering. Ideation and development of ideas.</i>	<i>Soldering – Quality Assurance.</i>
3a	<i>Assessment and Evaluation.</i>	<i>Practical lessons – Use of the Laser cutter and Coping saw.</i>	<i>Typography, net shapes and testing of ideas.</i>	<i>Vacuum forming including Health and Safety.</i>
3b	<i>Nutrition.</i>	<i>Assembly of product.</i>	<i>Application of net shape knowledge, presentation and evaluation.</i>	<i>Assembly/Quality Assurance/Evaluation.</i>

Year 8

Autumn Term 1a	Term 1b
<p>7 weeks</p> <p>Food</p> <p><i>Hygiene and Safety</i></p> <p>Pupils utilise the Food workbook to complete a range of theory activities around the theme of Hygiene & Safety.</p> <p>Pupils will complete practical work which allows them to implement Hygiene and Safety practices.</p> <p><i>Practical’s –</i></p>	<p>7 weeks</p> <p>Food</p> <p><i>Equipment, Processes and Skills</i></p> <p>Pupils utilise the Food workbook to complete a range of theory activities around the themes of Equipment, Processes and Skills.</p>

<p><i>1. A Sandwich (focus on clearing away).</i> <i>2. Pastry (simple shortcrust).</i></p> <p>Product Design <i>Health & safety / design brief/research</i> Students will be introduced to the Product Design workshop and the various safety requirements. They will learn the importance of Product Design in society and they will produce their first design brief for a client (currently Argos).</p> <p>Graphics Students will begin by looking into what Graphic Design is and why it is important within everyday life and industry. Students will then begin a skills booklet focussing on the development of practical drawing skills, in particular:</p> <ul style="list-style-type: none"> • Colour Theory. • Colour messages. • Rendering. • Isometric and oblique shapes. • Rendering techniques: cross-hatching, vertical lines, dots. • Adding shadows to an object. <p>Electronics <i>Health & safety / designing</i> Students will be introduced to the Electronics workshop and the various safety requirements. They will begin to research and develop ideas for their nightlight project.</p>	<p>Pupils will complete practical work which allows them to implement their knowledge of utilising Equipment, Processes and Skills. <i>Practical's –</i> <i>3. Cheese & Onion triangles.</i> <i>4. White chocolate & cranberry cookies.</i></p> <p>Product Design <i>Research and Generating design ideas</i> Students will continue with research for their project and learn techniques to help generate and develop design ideas. Drawing/Rendering skills will be covered as these are essential as they progress in design.</p> <p>Graphics Students will continue to work through their skills booklet. They will continue to practice the skills that they have developed so far and move onto some more technical methods, in particular:</p> <ul style="list-style-type: none"> • 2D and 3D shapes. • Representing materials. • Perspective drawing (one-point perspective and two-point perspective) • Crating <p>Electronics <i>Designing</i> Students will develop drawing and designing skills and will develop a range of creative designs for their nightlight. They will learn how to create a detailed design proposal from which they can make their product.</p>
<p>Spring Term 2a</p> <p>6 weeks</p> <p>Food <i>Assessment and Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities around their STAR assessed work and through evaluation of prior work. Pupils will complete practical work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. <i>Practical's –</i> <i>5. Breakfast bars.</i> <i>6. Chicken nuggets & BBQ sauce.</i></p> <p>Product Design <i>Materials research –</i></p>	<p>Spring Term 2b</p> <p>5 weeks</p> <p>Food <i>Food Sources & Availability and Sensory/Organoleptic Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities focussing on where food ingredients are sourced, how ethically and sustainably they are sourced and how the senses are used to judge foods in relation to customer acceptability. Pupils will complete practical work which utilises the food ingredients. <i>Practical's –</i> <i>7. Pear & Apple crumble.</i></p> <p>Product Design <i>Modelling –</i></p>

<p>Students will study materials that they will be using for the product (Various woods and plastics). What properties do they have? Where do they come from? What makes them suitable for our product? They will then produce a final design fully annotated including measurements and materials (numeracy skills).</p> <p>Graphics Students will begin to look at what a design brief is and what their significance and importance is within any design project. They will also take particular focus in designing, modelling and testing. They will begin by creating and testing a product, then analysing the product, disassembling it and adding graphics to their design. They must show how they are considering the design brief when completing this section of the project.</p> <p>Electronics <i>Health & safety/Soldering</i> Students will be introduced to the skills involved in soldering a circuit and will begin to develop their own circuit for the nightlight. They will learn how to identify components and place and solder them correctly.</p>	<p>Students will learn to model their design ideas to eradicate any issues before they begin manufacture of their final product (Wall clock) They will produce a plan for manufacture.</p> <p>Graphics Students will re-visit skills that they have acquired during the completion of their skills booklet. They will first focus on rendering and how to apply this to more complex objects, showing shape and form with their application of tone and shading. They will then focus on the development of logos, their importance of brand identity and will practice a method of logo development. Students will then be asked to design and develop a logo for their project ensuring that it is adhering to the brief.</p> <p>Electronics <i>Soldering/Quality assurance</i> Students will develop more complex soldering skills as their circuit progresses. They will learn how to 'fault find' a circuit by looking for problems and will develop an eye for quality. They will understand why it's important for a circuit to be neat and accurate.</p>
<p>Summer Term 3a</p>	<p>Term 3b</p>
<p>7 weeks</p> <p>Food <i>Assessment and Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities around their STAR assessed work and through evaluation of prior work. Pupils will complete practical work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. <i>Practical's –</i> <i>8. Cous cous salad.</i></p> <p>Product Design <i>Practical lessons – Laser Cutting / Coping saws</i> Students will learn how to use machines and equipment safely and sensibly to manufacture their products. They will learn to work as a team and peer assess each other's work.</p> <p>Graphics Students will begin by looking into Typography, how this can be applied within graphic design and how to use typography and one-point and two-point perspective together to produce an outcome.</p>	<p>7 weeks</p> <p>Food <i>Nutrition</i> Pupils utilise the Food workbook to complete a range of theory activities which focus around effective nutrition and healthy eating. Pupils will complete practical work which allows them to consider effective nutrition in practice and to further their utilisation of Hygiene & Safety in practice, Independence and Competency. <i>Practical's –</i> <i>9. Chicken Fajita Wrap.</i></p> <p>Product Design <i>Assembly of product –</i> Students will learn the correct way to join and assemble products depending on the type of material used. Correct glues etc. Students will self-assess and peer assess each other's work and produce a short evaluation.</p> <p>Graphics Students will learn about the applications of graphic design and where these can be seen and used within everyday life. They will design their own point of sale stand as part of their project and model this through</p>

<p>Students will then learn about net shapes, what they are, how they are used and how they are manufactured after being designed. Students will model an airplane using net shapes.</p> <p>Electronics <i>Health & safety/Vacuum forming</i></p> <p>Students will learn how to use the vacuum former safely to create a case for their nightlight. They will learn to be cooperative and support others by working in alternating pairs. They will learn how to use knives safely and accurately.</p>	<p>designing, modelling and testing their ideas. Students will then formulate their final design and their findings and present this to the class.</p> <p>Electronics <i>Assembly/Quality assurance/Evaluation</i></p> <p>Students will assemble the case and the circuit together and develop an eye for quality to ensure it has a high standard of finish. They will learn how to use suitable vocabulary to evaluate the finished product.</p>
<p>Implementation:</p> <p>The delivery of all four strands of Design and Technology at Key Stage 3 is underpinned by the National Curriculum programmes of study for D&T. The D&T department have utilised the guidance in these programmes of study to devise a 'mastery curriculum' where students aim to achieve 'milestones' at varying levels over the course of their study:</p> <p>Key Stage 3 D&T Milestones:</p> <p>Design</p> <ul style="list-style-type: none"> • Use research and exploration, such as the study of different cultures, to identify and understand user needs. • Identify and solve design problems and understand how to reformulate problems. • Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. • Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses. • Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. <p>Make</p> <ul style="list-style-type: none"> • Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. • Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties. <p>Evaluate</p> <ul style="list-style-type: none"> • Analyse the work of past and present professionals and others to develop and broaden understanding. • Investigate new and emerging technologies. • Test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups. • Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists. <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. • Understand how more advanced mechanical systems are used in products to enable changes in movement and force. 	

- Understand how more advanced electrical and electronic systems can be powered and used in products [for example, circuits with heat, light, sound and movement as inputs and outputs.]
- Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].

Cooking & Nutrition

- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.
- Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using own recipes]
- Understand the source, seasonality and characteristics of a broad range of ingredients.
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Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive and may be changed dependent on pace, challenge and student outcomes. Students are issued with a self-contained booklet for each D&T strand and most (although not all) theory work will be completed within these documents, providing evidence of outcomes and acquired knowledge whilst also showing progress (see below).

Impact:

High stakes testing of acquired knowledge and progress will take place through summative assessment in line with whole school policy. Live marking of theory work will be used to provide instant feedback to students and identify misconceptions throughout the year. The use of MAP sheets/peer and self-evaluation sheets and postcards will be used where relevant to give students localised and regular feedback.

Low stakes testing will be used as and when at the teacher’s discretion and will utilise a simple set of criteria.

Learning objective starters will incorporate DIN, Tier 2 vocabulary CST and Careers.

Progress will be measured over time; contributing to whole school policies on assessment and feedback to students and parents. Students work outcomes will provide the basis for analysis and intervention where appropriate and necessary; providing every student with the opportunity to be the best they can be.

Year 7 Contents table:

Term Subject	Food	Product Design	Graphics	Electronics
1a	<i>Hygiene and Safety</i>	<i>Health & Safety/Design brief/Research.</i>	<i>What is Graphic Design? Skills booklet – colour theory and rendering.</i>	<i>Health and Safety.</i>
1b	<i>Equipment, Processes and Skills.</i>	<i>Research and Generating design ideas.</i>	<i>Skills booklet- 2D and 3D shapes, one-point and two-point perspective, crating.</i>	<i>Designing.</i>
2a	<i>Assessment and Evaluation.</i>	<i>Materials research.</i>	<i>What is a design brief? Testing and evaluation.</i>	<i>Soldering – including Health and Safety.</i>
2b	<i>Food Sources & Availability and Sensory/Organoleptic Evaluation.</i>	<i>Modelling.</i>	<i>Rendering. Ideation and development of ideas.</i>	<i>Soldering – Quality Assurance.</i>

3a	<i>Assessment and Evaluation.</i>	<i>Practical lessons – Use of the Laser cutter and Coping saw.</i>	<i>Typography, net shapes and testing of ideas.</i>	<i>Vacuum forming including Health and Safety.</i>
3b	<i>Nutrition.</i>	<i>Assembly of product.</i>	<i>Application of net shape knowledge, presentation and evaluation.</i>	<i>Assembly/Quality Assurance/Evaluation.</i>

Year 7

Autumn Term 1a	Term 1b
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<p>7 weeks</p> <p>Food <i>Hygiene and Safety</i> Pupils utilise the Food workbook to complete a range of theory activities around the theme of Hygiene & Safety. Pupils will complete practical work which allows them to implement Hygiene and Safety practices. <i>Practical's –</i> <i>1. A Sandwich (focus on clearing away).</i> <i>2. Pastry (simple shortcrust).</i></p> <p>Product Design <i>Health & safety / design brief/research</i> Students will be introduced to the Product Design workshop and the various safety requirements. They will learn the importance of Product Design in society and they will produce their first design brief for a client (currently Argos).</p> <p>Graphics Students will begin by looking into what Graphic Design is and why it is important within everyday life and industry. Students will then begin a skills booklet focussing on the development of practical drawing skills, in particular:</p> <ul style="list-style-type: none"> • Colour Theory. • Colour messages. • Rendering. • Isometric and oblique shapes. • Rendering techniques: cross-hatching, vertical lines, dots. • Adding shadows to an object. <p>Electronics <i>Health & safety / designing</i> Students will be introduced to the Electronics workshop and the various safety requirements. They will begin to research and develop ideas for their nightlight project.</p>	<p>7 weeks</p> <p>Food <i>Equipment, Processes and Skills</i> Pupils utilise the Food workbook to complete a range of theory activities around the themes of Equipment, Processes and Skills. Pupils will complete practical work which allows them to implement their knowledge of utilising Equipment, Processes and Skills. <i>Practical's –</i> <i>3. Cheese & Onion triangles.</i> <i>4. White chocolate & cranberry cookies.</i></p> <p>Product Design <i>Research and Generating design ideas</i> Students will continue with research for their project and learn techniques to help generate and develop design ideas. Drawing/Rendering skills will be covered as these are essential as they progress in design.</p> <p>Graphics Students will continue to work through their skills booklet. They will continue to practice the skills that they have developed so far and move onto some more technical methods, in particular:</p> <ul style="list-style-type: none"> • 2D and 3D shapes. • Representing materials. • Perspective drawing (one-point perspective and two-point perspective) • Crating <p>Electronics <i>Designing</i> Students will develop drawing and designing skills and will develop a range of creative designs for their nightlight. They will learn how to create a detailed design proposal from which they can make their product.</p>
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<p>Spring Term 2a</p> <p>6 weeks</p> <p>Food <i>Assessment and Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities around their STAR assessed work and through evaluation of prior work. Pupils will complete practical work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. <i>Practical's –</i> 5. Breakfast bars. 6. Chicken nuggets & BBQ sauce.</p> <p>Product Design <i>Materials research –</i> Students will study materials that they will be using for the product (Various woods and plastics). What properties do they have? Where do they come from? What makes them suitable for our product? They will then produce a final design fully annotated including measurements and materials (numeracy skills).</p> <p>Graphics Students will begin to look at what a design brief is and what their significance and importance is within any design project. They will also take particular focus in designing, modelling and testing. They will begin by creating and testing a product, then analysing the product, disassembling it and adding graphics to their design. They must show how they are considering the design brief when completing this section of the project.</p> <p>Electronics <i>Health & safety/Soldering</i> Students will be introduced to the skills involved in soldering a circuit and will begin to develop their own circuit for the nightlight. They will learn how to identify components and place and solder them correctly.</p>	<p>Spring Term 2b</p> <p>5 weeks</p> <p>Food <i>Food Sources & Availability and Sensory/Organoleptic Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities focussing on where food ingredients are sourced, how ethically and sustainably they are sourced and how the senses are used to judge foods in relation to customer acceptability. Pupils will complete practical work which utilises the food ingredients. <i>Practical's –</i> 7. Pear & Apple crumble.</p> <p>Product Design <i>Modelling –</i> Students will learn to model their design ideas to eradicate any issues before they begin manufacture of their final product (Wall clock) They will produce a plan for manufacture.</p> <p>Graphics Students will re-visit skills that they have acquired during the completion of their skills booklet. They will first focus on rendering and how to apply this to more complex objects, showing shape and form with their application of tone and shading. They will then focus on the development of logos, their importance of brand identity and will practice a method of logo development. Students will then be asked to design and develop a logo for their project ensuring that it is adhering to the brief.</p> <p>Electronics <i>Soldering/Quality assurance</i> Students will develop more complex soldering skills as their circuit progresses. They will learn how to 'fault find' a circuit by looking for problems and will develop an eye for quality. They will understand why it's important for a circuit to be neat and accurate.</p>
<p>Summer Term 3a</p> <p>7 weeks</p> <p>Food <i>Assessment and Evaluation</i> Pupils utilise the Food workbook to complete a range of theory activities around their STAR assessed work and through evaluation of prior work.</p>	<p>Term 3b</p> <p>7 weeks</p> <p>Food <i>Nutrition</i> Pupils utilise the Food workbook to complete a range of theory activities which focus around effective nutrition and healthy eating. Pupils will complete practical work which allows them to consider effective nutrition in practice and to</p>

<p>Pupils will complete practical work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency.</p> <p><i>Practical's –</i> <i>8. Cous cous salad.</i></p> <p>Product Design <i>Practical lessons – Laser Cutting / Coping saws</i> Students will learn how to use machines and equipment safely and sensibly to manufacture their products. They will learn to work as a team and peer assess each other's work.</p> <p>Graphics Students will begin by looking into Typography, how this can be applied within graphic design and how to use typography and one-point and two-point perspective together to produce an outcome. Students will then learn about net shapes, what they are, how they are used and how they are manufactured after being designed. Students will model an airplane using net shapes.</p> <p>Electronics <i>Health & safety/Vacuum forming</i> Students will learn how to use the vacuum former safely to create a case for their nightlight. They will learn to be cooperative and support others by working in alternating pairs. They will learn how to use knives safely and accurately.</p>	<p>further their utilisation of Hygiene & Safety in practice, Independence and Competency.</p> <p><i>Practical's –</i> <i>9. Chicken Fajita Wrap.</i></p> <p>Product Design <i>Assembly of product –</i> Students will learn the correct way to join and assemble products depending on the type of material used. Correct glues etc. Students will self-assess and peer assess each other's work and produce a short evaluation.</p> <p>Graphics Students will learn about the applications of graphic design and where these can be seen and used within everyday life. They will design their own point of sale stand as part of their project and model this through designing, modelling and testing their ideas. Students will then formulate their final design and their findings and present this to the class.</p> <p>Electronics <i>Assembly/Quality assurance/Evaluation</i> Students will assemble the case and the circuit together and develop an eye for quality to ensure it has a high standard of finish. They will learn how to use suitable vocabulary to evaluate the finished product.</p>
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Implementation:

The delivery of all four strands of Design and Technology at Key Stage 3 is underpinned by the National Curriculum programmes of study for D&T. The D&T department have utilised the guidance in these programmes of study to devise a 'mastery curriculum' where students aim to achieve 'milestones' at varying levels over the course of their study:

Key Stage 3 D&T Milestones:

Design

- Use research and exploration, such as the study of different cultures, to identify and understand user needs.
- Identify and solve design problems and understand how to reformulate problems.
- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.
- Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses.
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.

Make

- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.
- Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

Evaluate

- Analyse the work of past and present professionals and others to develop and broaden understanding.
- Investigate new and emerging technologies.
- Test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.

Technical Knowledge

- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.
- Understand how more advanced mechanical systems are used in products to enable changes in movement and force.
- Understand how more advanced electrical and electronic systems can be powered and used in products [for example, circuits with heat, light, sound and movement as inputs and outputs.]
- Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].

Cooking & Nutrition

- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.
- Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using own recipes]
- Understand the source, seasonality and characteristics of a broad range of ingredients.
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Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive and may be changed dependent on pace, challenge and student outcomes. Students are issued with a self-contained booklet for each D&T strand and most (although not all) theory work will be completed within these documents, providing evidence of outcomes and acquired knowledge whilst also showing progress (see below).

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Year 6 – Curriculum Outline

Year 6 - DESIGN

Key Stage Two: -

-use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at specific individuals or groups

☒-generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Key Stage 3

-generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design ☒ use research and exploration, such as the study of different cultures, to identify and understand user needs-

identify and solve their own design problems and understand how to reformulate problems given to them

☒-develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations use a variety of approaches [for example, biomimicry and user-centred design],to generate creative ideas and avoid stereotypical responses

☒-develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Design

- Use a range of information to inform their design
- Use market research to inform plans
- Work within constraints.
- Justify their plan to someone else
- Keep cost constraints in mind when selecting materials in design
- Use their knowledge of science and art when designing.
- Draw scaled diagrams with increasing use of ratio.
- Calculate the amount of materials needed use this to estimate cost.
- Consider the use of the product when selecting materials
- Make up a prototype first?

Year 6 – MAKE

Key Stage Two:

-select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

-select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Key Stage Three:

-select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture

-select from and use a wider, more complex range of materials, components and ingredients, considering their properties

- * Use selected tools and equipment precisely.
- * Produce suitable lists of tools, equipment, materials needed, considering constraints
- * Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics
- * Create, follow, and adapt detailed step-by-step plans
- * Explain how product will appeal to audience; make changes to improve quality

- * Accurately measure, mark out, cut and shape materials/components
- * Accurately assemble, join and combine materials/components
- * Accurately apply a range of finishing techniques
- * Use techniques that involve several steps
- * Be resourceful with practical problems

Y6 – EVALUATE

Key Stage Two

- investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- ☒ - Understand how key events and individuals in design and technology have helped shape the world-

Key Stage Three:

- analyse the work of past and present professionals and others to develop and broaden their understanding investigate new and emerging technologies
- test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups-
- understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

- * Evaluate quality of design while designing and making; is it fit for purpose?
- * Keep checking design is best it can be.
- * Evaluate ideas and finished product against specification, stating if it's fit for purpose
- * Test and evaluate final product; explain what would improve it and the effect different resources may have had
- * Do thorough evaluations of existing products considering how well they've been made, materials, whether they work, how they've been made, fit for purpose
- * Evaluate how much products cost to make and how innovative they are
- * Research and discuss how sustainable materials are
- * Consider the impact of products beyond their intended purpose
- * Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products

Y6 – TECHNICAL KNOWLEDGE

Technical knowledge – Mechanisms

Create designs that include cams, gears or pulleys.

Technical Knowledge - Electrical Components

- Use several components in a circuit e.g., light, buzzer, motor
- Use different kinds of circuits in their product to improve it. E.g., series, parallel
- Incorporate a switch into their products
- assess faults in their own electrical systems
- test components in a simple series circuit

Use computer programming to control a circuit.

Technical Knowledge – Textiles

- Be able to thread a needle
- Develop skills of sewing textiles by joining right side together and making seams.
 - Investigate how to sew and shape curved edges by snipping seams,
 - Tack or attach wadding or stiffening
 - Learn how to start and finish off a row of stitches
 - Use a wider range of stitching techniques - stem stitch, satin stitch,
 - Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product.
 - Pin a pattern on to fabric ensuring limited wastage,
 - Leave a seam allowance
 - Use different cutting techniques.
 - Develop skills of computer-aided design (CAD) by using on-line pattern making software to generate pattern pieces.
 - Investigate using art packages on the computer to design prints that can be applied to textiles using iron transfer paper.

Y6 – FOOD AND NUTURTION**Key stage 2**

-Understand and apply the principles of a healthy and varied diet

prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

-Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

Key stage 3

-Understand and apply the principles of nutrition and health cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet

-Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]

- Understand the source, seasonality and characteristics of a broad range of ingredients.

* Understand a recipe can be adapted by adding / substituting ingredients

* Explain seasonality of foods

* Learn about food processing methods

* Name some types of food that are grown, reared or caught in the UK or wider world

* Adapt recipes to change appearance, taste, texture or aroma.

* Describe some of the different substances in food and drink, and how they can affect health

- * Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.
- * Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.